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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,811	02/18/2004	Cheng-Qun Gui	1857.2620000	6835
26111	7590	10/13/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			MATHEWS, ALAN A	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/779,811

Applicant(s)

GUI ET AL.

Examiner

Alan A. Mathews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-9 and 11-20 is/are rejected.
- 7) ☒ Claim(s) 3-6 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/11/05 &amp; 8/17/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-9, 11-14, 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Mei (U. S. Patent No. 6,473,237). Figure 2 and column 3, lines 15-67, disclose an illumination system including element 32. An array of individually controllable elements 38 imparts a projection beam with a pattern and could be a DMD (see column 3, lines 49-55). Element 44 is the substrate (subject) table supporting a substrate (subject) 42. Figure 11 and column 7, lines 60-67, and column 8, lines 1-38, disclose a DMD 38 and a projection system that includes an array of focusing elements 154 (microlens array). In one embodiment, there are as many individual microlenses as there are pixel elements in the pixel panel 38. In other words, each single microlens accommodates a single pixel element (individually controllable elements). This embodiment would not read on the claims. But Mei discloses other embodiments. In column 8, lines 22-25, Mei states “In other embodiments, the number of lenses may be different from the number of pixel elements in the pixel panel. **In these embodiments, a single microlens may accommodate multiple pixel elements of the DMD ---.**” A pixel element would be an individually controllable element. A single microlens (focusing element)

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accommodates multiple pixel elements (multiple individually controllable elements), This “multiple individually controllable elements” would be a group of individually controllable elements producing respective portions of the patterned beam. Element 170a in figure 11 would be an area of the substrate that would be exposed. To properly illustrate this embodiment, figure 11 would need to be modified to have several pixel elements, such as 156a, 156b, and 156c, going to one microlens 154a. With respect to claim 2, column 3, lines 49-58, disclose the typical On (first intensity) and Off (second intensity) state of each mirror. With respect to claims 7, 8, 11, and 12, figure 14, and column 10, lines 26-34, disclose changing the intensity by turning on and off the corresponding pixel element. The actuator includes scanning motor 52 for stage 44 (see column 4, lines 1-4). Arrow 136 in figure 2 shows a scanning direction. With respect to claim 16, figure 2 shows illuminating the array of individually controllable elements with oblique radiation.

With respect to Applicants arguments concerning groups of individually controllable elements producing respective portions of a patterned beam, it is noted that the group of pixel elements that are accommodated by a single microlens (and the next group of pixel elements accommodated by the next single microlens) would be considered to be groups of individually controllable elements producing respective portions of a patterned beam.

3. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Markle (U. S. Patent Application Publication No. 2002/0171816 A1). Markle discloses in paragraph #93 making flat panel displays. Claim 20 is a product-by-process claim, with the product being a flat panel display. MPEP 2113 states **that the determination of patentability of a product-by-process**

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**claim is based on the product itself. The patentability of a product does not depend on its method of production.** The device or wafer produced in Markle appears to be the same product as produced by claim 20. The Examiner can find no difference in the flat panel display produced in Markle than the flat panel display produced by claim 20 of the instant application. It is further noted that MPEP 2113 gives an example where the process of making the product was allowed, but the product-by-process was rejected.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mei (U. S. Patent No. as applied to claim 13 above, and further in view of Markandey et al. (U. S. Patent No. 6,473,237). Mei discloses the invention the invention except for specifically disclosing a plurality of individually controllable elements arranged in a square configuration. Markandey et al. discloses in column 1, line 52, making a DMD in the form of a square. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the DMD in Mei in the form of a square in view of Markandey et al. for the purpose of making it

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easier to manufacture an DMD and for the purpose of better control of the DMD. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the DMD in Mei in the form of a square for the purpose of making it easier to manufacture and for the purpose of better control of the DMD.

*Allowable Subject Matter*

6. Claims 3-6 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for the indicated allowability of the claims are as follows:

The prior art does not disclose or suggest wherein each of the individually controllable elements can be set to one or more additional states in which radiation, at an intensity between that of the first and second states, the intensity between that of the first and second states being different from an intensity of all of the other states, is directed onto the corresponding portion of the patterned beam in combination with all the other elements recited in the parent claims dependent claim 3.

The prior art does not disclose or suggest wherein at least one individually controllable element can be set such that in each of its states it passes a different proportion of the radiation incident on the individually controllable element to the associated focusing

element than at least one other individually controllable element that is associated with the same focusing element in anyone of its states in combination with all the other elements recited in the parent claims to dependent claim 4.

The prior art does not disclose or suggest at least one attenuator for reducing the intensity of the radiation incident on one of the individually controllable elements relative to another individually controllable element associated with the same focusing element in combination with all the other elements recited in parent claim to dependent claim 5.

The prior art does not disclose or suggest at least one attenuator for attenuating the radiation from one of the individually controllable elements such that a portion of the radiation propagating from the individually controllable element that reaches the associated focusing element is less than a further portion of the radiation propagating from at least one other individually controllable element that reaches said focusing element in combination with all the other elements recited in parent claim to dependent claim 6.

The prior art does not disclose or suggest wherein each of the individually controllable elements can be set to at least three states in combination with all the other elements recited in parent claim to dependent claim 10.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents cited in the PTO-1449 are cited for the same reasons they were cited in Applicant's IDS.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

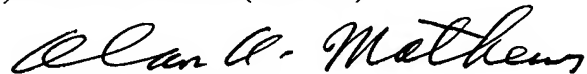
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews  
Primary Examiner  
Art Unit 2851

AM